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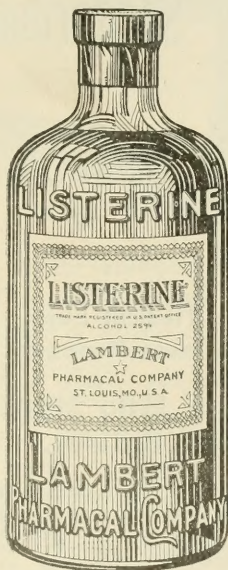
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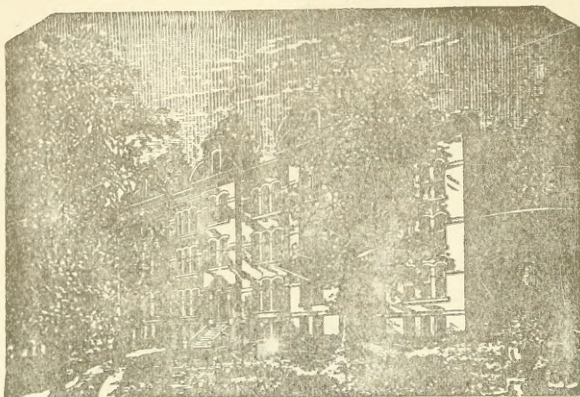
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
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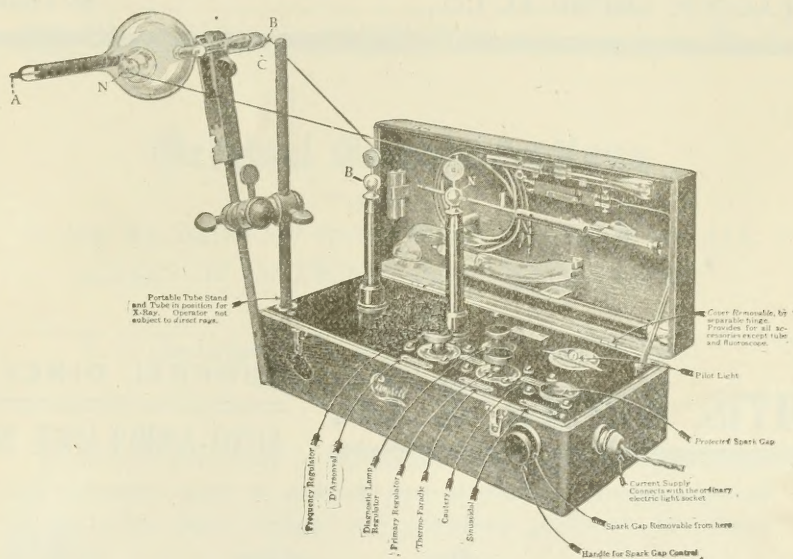
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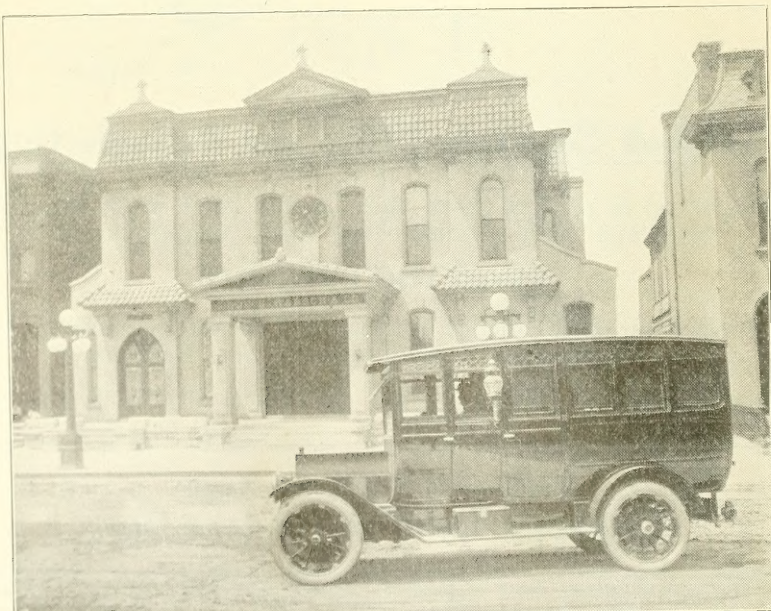
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NASHVILLE JOURNAL — OF — MEDICINE AND SURGERY

CHARLES S. BRIGGS, A. M., M. D., Editor
W. T. BRIGGS, M.D., Associate Editor.

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MARCH, 1915.

No. 3

Original Communications

SOME PROMINENT SYMPTOMS COMMON TO ALL CASES OF INEBRIETY AND ALCOHOLISM.

T. D. CROTHERS, M.D., Supt. Walnut Lodge Hospital,
Hartford, Connecticut.

From a clinical study of the history and progress of more than ten thousand cases of inebriety and alcoholism, during a period of thirty-five years, certain very prominent psychoses have been observed.

These have appeared in so large a proportion of cases, with such uniformity and clearness of outline, that they may be called central facts, which, like head lands of a new country, furnish stations for further study and observation.

I have given particular attention to the facts of heredity in these cases, and have been able to discover some laws which control the transmission and degenerations, associated and dating from the poisons of alcohol. Many of these psychoses are inherited defects which are developed and intensified by a great variety of causes, of which the toxins of alcohol are the most prominent.

Auto-intoxication and other profound toxæmias from causes known or unknown, often culminate in these conditions. Of

course there are many links in the chain of evidence, not yet clear, but certain general facts appear so often and are so well defined as to be beyond question.

Statistics representing this, show that over 50 per cent of all inebriates and alcoholics come from inherited degenerations, and are literally the expression of transmitted defects.

My purpose in this study is to point out some of these neuro-psychoses that are clearly traceable to this source, and others that are due to acquired conditions, or specifically traceable to the direct anæsthetic effects of alcohol on the body and brain.

It is often difficult to discriminate in every case many of these conditions, and determine how far they are due to any special range of causes, and to trace alcohol as the direct exciting cause, or its use as simply a symptom of degenerations both inherited or acquired.

In a grouping of these psychoses the

SENSORY DISTURBANCES

are undoubtedly the most prominent, and traceable both at the bed-side and in the laboratory. They indicate some primary disturbances which are more or less traceable in all cases.

Clinically, the person who uses spirits, either in so-called moderation or to evident excess, is always found to have defective senses. Thus in railroading and occupations where accuracy of sight and other sensory activities, with rapidity of thought, are absolutely essential, such persons are always found incompetent. Very serious accidents on railroads, steamboats and in other occupations are traceable to defective senses, and inability to estimate conditions, by responsible persons, who have used spirits.

The ability required for accurate judgment of the surroundings and the sensory relation of things was lowered, hence the accident.

Leaders of orchestras and persons depending on accurate recognition of sounds, suffer seriously from the direct effect of even small quantities of alcohol. This defect may manifest itself in exaggerated conceptions or diminished impressions of sounds.

In the same way, touch, taste and smell are deranged, disturbed,

lowered or exaggerated, following the action of alcohol. Tea tasters find that total abstinence from all use of spirits is requisite to do their work well. Others whose work depends on accuracy of observation, memory and sense preceptions, such as accountants, auditors and observers in astronomical stations, realize the increasing proportion of errors that are due and follow the use of small doses of alcohol.

The facts are so numerous and verifiable in this and other fields of work as to indicate beyond question the depressive and anesthetic action of alcohol on the senses.

The facts are so numerous and verifiable in this and other fields of work as to indicate beyond question the depressive and anesthetic action of alcohol on the senses.

This brings striking confirmation to Kraepelin's classical laboratory studies, to determine whether alcohol has any stimulant or tonic properties apparent in the senses which could be measured by instruments of precision.

These experiments were conducted on total abstainers and began by a study of the normal sense activities, going over a period of many days, so as to secure a personal equalism and degree of sensory activity from which to date comparative studies of the effects of spirits.

The tests began by giving dram doses of alcohol to each one and measuring the senses at intervals of a half to one hour from the time the spirits were registered in the greater activity and increased power of the senses, and this compared with the conditions noted in previous measurements, would represent the changes if any, due to the direct action of alcohol.

These experiments were extended over many days and under variable conditions and were all remarkable for the uniformity of the results. These in all cases showed a depressant and anesthetic action on the senses, and in no instance was there evidence of improvement, stimulation or greater activity.

Small doses of alcohol produced certain definite effects which were increased with the size of the dose, and this was definite, positive and unmistakable.

From the first effect, it was depression, anesthesia, palsy, continuously, only varying in intensity. Hence the psychosis of inebriety and alcoholism is always diminished sensory activities, defective consciousness of the relations of life to the outside world, and inability to understand the surroundings, and adapt ones self to them, with the accuracy of one who has not used spirits.

The conclusion was that all the senses are anesthetized, some more than others. Small doses of alcohol may not always show prominently in every instance, but a continuous use of spirits, even in small doses is certain to be seen in the lowered sensory activities.

This psychosis is found in practically all cases.

There is another condition common, but not so often recognized which may be designated as

CIRCULATORY CHANGES AND PSYCHOSES.

The man who uses spirits has derangement of the circulatory system and this practically amounts to a psychosis which is evident from the accumulated facts and observations in clinical experience and laboratory researches.

The heart's action is irregular, either greatly exaggerated or depressed from the ingestion of small quantities of alcohol. The clinician notes this, and also the distinct changes seen in the surface of the body. The temperature on the surface is raised and later it is lowered. The thermic centers are disturbed and sensations of heat and cold are exaggerated and depressed. The patient is conscious of these extremes of heat and cold and also of his ability to adapt himself to these changes. Congestions follow, evident in various acute disturbances of digestion, depressed activities and general derangement of the normal functions of the body.

This disturbance of the circulation is manifest in irregularities of conduct, loss of control, inability to endure, and general failure in conditions of emergency or strain. This is seen in a great many ways and in most of the activities of life. Thus in

the service of the army and navy, the drinking man is the first to break down and fail when placed in a responsible position.

In the commercial world or in professional circles, the drinking man has always irregularities of conduct and instabilities with inefficiency and inferiority when placed in a position requiring exact arduous work.

On the sick-bed in the hospitals, there is low vitality and high mortality in every disease in persons who have used spirits. Pneumonia, and cerebral hemorrhage occurring in middle life almost invariably suggests a previous use of spirits, and at all events are seen most frequently in persons who drink. In operations in hospitals, in infectious diseases, the severe and fatal cases have as a rule a history of alcohol taking and the connection between this and low vitality and resisting power is so evident as to be unquestionable.

The tendency to disease is so pronounced, particularly from derangements of this class, that we are justified in calling it a psychosis, traceable to alcohol. The laboratory researches sustain this inference, and show that the physiological action of alcohol in suddenly raising the number of heart beats, and thus increasing the volume of blood to all parts of the system is the direct result of vasomotor palsy.

Post-mortems of persons who have died from accidents, soon after the ingestion of spirits, have shown the same palsy and congestion. In other instances the blood is driven out of the capillaries of certain parts of the brain and body, marked by an intense anemic appearance. Thus the flushed face or pale anemic face both indicate great changes in the circulation.

The tension of the arteries is first raised and then falls, and this alternate raising and lowering of the tension by the action of alcohol on the vasomotor centers is followed by changes at first functional, then organic. The normal rhythmic movement of the blood, essential to health, is broken up, and a convulsive activity results. The heart is overworked, dilation follows and consequent weakness.

This derangement is the beginning of a great variety of favorable conditions, encouraging the germ diseases, and local inflam-

mation from mechanical blocking or rupture of capillaries, with fracture of the walls of the inner coats of the arteries.

These are registered in a great variety of abnormalities, many of them discernable with the eye, and others seen only under the microscope. The connection between these lesions and the toxins of alcohol is so close that the acute observer can trace them in the hardened liver, the cirrhotic arteries and other contracted tissues.

A third psychosis and distinct neurosis with traceable causes may be termed the

NUTRITIVE AND METABOLIC CHANGES.

The conditions and symptoms here, while varying from a great variety of causes, are always uniform and pronounced.

The dehydrating action of alcohol on the cells, diminishing the fluids, corrogating its granular matter, breaks up functional activity, and is the beginning of a vicious circle of very serious consequences.

Persons who use spirits are always more or less ill nourished, and practically poisoned. They have the appearance of hypernutrition, but are anemic and neurasthenic; foods are never properly assimilated. Metabolic changes result in fatty depositions which are retained, instead of being thrown off.

The beer drinker with his bloated appearance and abnormal fat is a degenerate, with deranged heart activities and increasing feebleness. Men who work in breweries and on the docks in large seaports, drinking large quantities of beer, are examples. In appearance they seem robust. In reality they have very low vitality, suffer severely from shocks, chills, injuries and acute inflammations. They have a high mortality.

Men who use spirits in so-called moderation have distinct signs of degenerations in anemias, hyperaemias and toxemias. They develop neurotic changes, are paranoiacs, maniacal or depressed to the verge of melancholia.

Their work and thought is the same. They always have a high rate of mortality and feeble powers of resistance when sick.

Such persons are never able to adjust themselves to surroundings. There is a certain lack of vigor with pessimistic instability, indicating toxic causes, delusional conceptions spring up in this soil. This follows naturally from faulty nutrition and elimination. Alcohol not only breaks up nutrition, but forms toxins, which are absorbed and become still further sources of poison to cell life and growth.

Oxidation processes are disturbed, transformations of energy and heat are irregular and the normal balance is broken up. Fermentative changes and mechanical blockings occur in a great variety of ways. The psychosis of old age is precipitated and encouraged.

From these changes noted in the senses, in the circulation, and nutrition, there follows

CERTAIN MENTAL CHANGES

which are distinct and uniform with all their complex variations and symptoms.

These changes appear most commonly in two classes. One of parietic exaltation with egotistical delirium and delusions of strength and vigor. The other of depression, gloom and intense pessimism, merging into melancholia.

In the first the patient has no realization of any weakness. Every indication of this is imaginary. Whatever he may have done his real strength and vigor is in no way impaired. Alcohol has produced no injury whatever. He has vitality that is immune to it. Explanations, excuses and delusive reasonings concerning the use of spirits are common. No experience brings any sense of danger, but rather increases confidence and faith to overcome any particular action that may follow.

Such persons defend the tonic and stimulant action of alcohol. They denounce adulterations as the active causes of anything ill that follows from it. They cite their own personal experience as a refutation of all theories and reasonings of others.

Laboratory experience and studies are ignored as not applicable to their cases. In the later stages some of these parietic drink-

ers may realize for a short time the error of their faith, but later the delusions come back with greater vigor and dominance. This is a veritable psychosis in which the mental condition is clearly unable to appreciate the conditions of the present and relation of the surroundings.

The second condition so common may begin with exaltation and confidence in ability to use alcohol without damage and then after a time, develop the opposite, or a stage of intense depression. The person will begin to use spirits, either as a sudden obsession or impulse or from an elaborate reasoning concerning its value and necessity; then after a time become anesthetized, depressed and later realize the destructive power of spirits and be precipitated in what is called the remorse stage.

At this time there is an intense morbid consciousness of the injury following from alcohol and an equally intense determination to overcome it, with convictions that he will never use it again. Later this is forgotten and spirits are taken again up to the point of stupor and poisoning, and then a struggle to rise above them and reasonings both optimistic and pessimistic that vary with the individual, but for the time occupy a very intense place in his activities.

The periodic drinker and the man who drinks to stupor at intervals is in this class. The constant drinker of beer or wine at the table, or spirits, for every imaginary reason, belongs to the first class. Among the many psychoses which are likely to appear in both of these classes, is the delusion of the infidelity of his association and family, particularly of his wife. This starts up without any exciting causes and for a time seems very acute, then dies out, only to break out again. It usually is dependent on the amount of spirits used and the chronic conditions which follow.

Delusions of wealth, poverty or injury from plots and enemies, are very common. Sometimes they are transient and only appear when the person is particularly poisoned with spirits. Later they become so fixed as to be unresolvable. In a certain number of persons intense irritation, suspicions with delirium, followed by melancholia and depression mark the toxic stage from alcohol.

It is noted that certain drugs have a peculiarity in developing these psychoses. Absinth is one of them. Complex alcohols, whose ethers have a special local action on different brain centers, will produce certain peculiar symptoms.

There is a convulsive psychosis often apparent which is yet to be studied. This frequently leads to crime, and is traceable to local palsies and anesthetics, evidently limited to some special section of the brain.

The evidence that these are toxic in their origin is very clear in their subsidence after the removal of spirits. There is in this field a great wealth of illustrative facts which are yet to be worked out. One particular psychosis or rather condition of mind and body ought to be recognized. That is a depressive state, or a condition of general feebleness. This may not be very apparent, except from careful study.

There is physically an irregular heart action, a very high or low tension of the arteries and some general nutrient disturbances, sometimes characterized by dyspepsia and other general derangements which may not be clearly recognized.

Beyond this in the mental sphere, there are faults and abnormalities far in excess of those seen in total abstainers, in the same conditions of life. There is something wanting, not only in his mental prospective, reasoning, stability, purpose and object in life, and this takes on very many forms and shapes.

The conclusion is inevitable, that the anesthesia from alcohol has left a lowered, depressive condition that can not be mistaken. There is another psychosis which has attracted attention in a general way, and is expressed by the term moral paralysis, which describes a diminished consciousness of right and wrong, duty and responsibility, and a general failure to appreciate the ethical relations of the person to his surroundings and to his family and society.

The evidence of this is numerous and very marked. The police courts are rich in illustrations. The senseless crimes, the purposeless acts, the lack of recognition of every element of pride and character, are all signs of palsy and degeneration from this one particular agent. There are no doubt exceptions, but the

rule is so pronounced that it may be stated as a central truth, that the last formed and highest functions of the human brain, called consciousness of right and wrong, are the first to become palsied from the toxic action of spirits.

The statement may go farther and say that any use of spirits for any length of time, or in any form, is always followed by a certain degree of so-called moral palsy or feebleness to recognize the ethical relations of life and surroundings.

I conclude with a reference to some very interesting studies which I have made of the psychology of writers of modern literature, whose work showed alcohol and drug taking. The evidence is unmistakable that considerable literature of the present time is the direct product of brains working under the influence of spirits and drugs. The kind of thought and the language which it conveys, together with the purpose of the author and his changing conceptions, all indicate abnormalities and drug taking. Thus articles written under the influence of cocaine have a distinct literary cast, unlike any others. Articles written under the influence of beer have another marked characteristic, and the writer who depends on alcohol to furnish inspiration and vigor, all unconsciously writes down the evidence of the spirits he is using and their peculiar influence on his mind.

In extreme stages critical listeners in an audience soon determine the alcoholized mind of the speaker; in much the same way a study of the thought and expression of many writers show the psychosis of the author. In this there is a wealth of illustration and facts that are yet to be studied.

To the average mind there can be no question about the pathological and psychological changes, following the use of alcohol, particularly in the later stages. The efforts to trace these changes in the earlier stages and to show a distinct psychosis as well as neurosis and positive disease, is a new field.

We are on the frontiers of this new land and investigations can be made here without the aid of the laboratory or the chemical expert.

THE TREATMENT OF GUNSHOT WOUNDS IN
GENERAL.

BY O. V. ANGERER, SURGEON GENERAL.

(Translated from the *Münchener Medizinische Wochenschrift*, by W. T. Briggs, M.D., Nashville, Tenn.)

The editorial staff of the *Münchener Medizinische Wochenschrift* requested me to write a short paper on the treatment of gunshot wounds in general for the war supplement of that journal. My personal experiences is confined to such gunshot wounds as occur in times of peace. It's true that in 1870-71 I saw active service in the hospitals of Würzburg as a volunteer physician, but in that service we treated among the French only gunshot wounds which had been received some time before they arrived in the hospital, and the treatment at that time differed in its principles very much from the treatment of today. The difference between gunshot wounds occurring in civil and military life are only of a quantitative kind and the principles of treatment are essentially the same, even though the methods of treatment must, in the case of wounds received in battle, be made appropriate to the peculiar conditions of war.

Military surgery is, like surgery in civil life, for the most part a reflection of the prevailing teachings, even though the indications for surgical treatment on the field are somewhat different from the indications in a well ordered hospital. Operations which, in the one situation are comparatively safe, in the other would be inadmissible.

Gunshot wounds have especially interested physicians, and even the laity, through the ages, and even philosophers have devoted some of their attention to this type of injury. For example, the philosopher Ely defined gunshot wounds as "the physical expression of the danger passed." Whoever has familiarized himself with the teachings in regard to gunshot wounds during the past century, will find that along with the changes in the opinion of gunshot wounds an interesting paragraph of the history of the

social standing of physicians is interwoven. Simply recall the times of the regimental surgeon, and that even in the seven years' war the junior surgeon had the rank of a drummer, and that down to the time of Frederick the Great the regimental surgeon could expect a whipping if he let one of his great grenadiers die. How the times have changed! What an exceptionally prominent position the physician occupies today in the German Empire and everywhere among civilized nations!

In the treatment of gunshot wounds the principles advocated by Larrey at the beginning of the 19th century were the direct antithesis of those held by Stromeyer in the middle of the century. The former preferred amputation of the injured limb in order to quickly and with a minimum amount of danger get rid of the injury. The latter advocated the conservative treatment in the most extreme form, and indeed, without the plaster bandage which Pirogoff first introduced into military surgery.

Especially since the Franco-Prussian war has the treatment of gunshot wounds changed. The prescribed exploration of wounds with sounds and fingers, the slitting open of the tract of the bullet, the extraction of the bullet, the resections in continuity and contiguity were all recognized and practiced as the regular treatment. The tract of the bullet was spouged with antiseptic solutions and drained. Some wounds were poulticed, others were continuously irrigated, some surgeons extolled an airtight dressing, others, like Burrows, exposed the wound to the air or let healing occur under the scab.

The introduction of the methods of wound treatment as advocated by Lister and the experiences of surgeons during peaceful times have wrought fundamental changes. Moreover, there has been a thorough study of the anatomy of gunshot wounds in an experimental way, and last but not least, the discovery of the Röntgen rays has had such a great influence that many teachings heretofore held as dogma, have been completely changed.

It is not my task to enter into a discussion of the changes in the character of gunshot wounds caused by the modern small calibre rifle. I wish merely to emphasize the fact that gunshot wounds with small wounds of entrance and exit must be looked

upon as primarily aseptic in spite of the fact that the bullet penetrates both the clothes and skin of the wounded man and also carries into the wounds a small number of pathogenic bacteria germs. The protective forces of our bodies are prepared to take care of these germs if they are not hindered by meddling on our part. The danger of infection begins and increases with each dressing which is not an absolute necessity. The investigations of Messner in 1882 showed that, in all the cans shot with bullets not previously infected, no pathological germs developed in the nutrient gelatine. The missile was sterile, since as a general rule, bacteria do not develop on metallic bodies. Indeed it almost seems that metals possess a certain bactericidal power. If however, the bullet was infected immediately before with staphylococci or bacilli prodigiosus, then the germs developed in the nutrient gelatine in the tract of the bullet, which demonstrated that the bullet was not sterilized by the heating which takes place in flight as was formerly believed. Further, we have the investigations of Pfuhl who dressed animals in ragged infected clothes and cured them without reaction, which shows the power of the protective forces of our bodies. From this we must conclude that search of foreign bodies carried into the wound and the search for buried bullets and their removal at any price are for the most part to be condemned, since the former supposition that foreign bodies per se are a cause of suppuration is false.

The doctors, who at the present time, attend my clinic, could convince themselves of the correctness of the above mentioned experiment.

A young man shot himself in the temple with suicidal intent. The ball lay outside the skull. The small wound of entrance was dressed in the very simplest manner, and there was no trace of inflammation during the healing process. After eight days I removed the bullet from under the temporal fascia, also some of the hair which had been carried in by the bullet, and yet there was no inflammatory reaction in spite of this non-aseptic foreign body. Such important results have had a decided influence on the treatment of wounds. I know that relative to such results there is no unanimity among surgeons, with the result that some advocate

conservatism, others a more active treatment. But here, as in all other cases, clinging to one extreme principle is capable of harm, and our therapeutic treatment must depend on the accompanying conditions.

In war it is better for the surgeons to be conservative and to check a desire to operate.

The treatment of gunshot wounds in time of peace is conducted under the most favorable conditions, essentially more simple and well ordered than in war. Here it is a fight with conditions and allowances must be made for the very great number of wounded and the lack of sufficient help. For that reason in war the desideratum is to obtain the best results by the simplest means. Experiences in the last wars have shown that the rules of E. V. Bergman for the care of the wounded, which rules were based on experience in the Russo-Turkish war of 1877, are practicable. Bergman desired no freedom of thought, no individuality in the treatment of gunshot wounds received in battle; and these rules, which were formulated for war, have proven valuable in peace.

We often see how ordinary wounds are infected by the unclean hands of the workmen, as well as by dirty dressings and cleansing with water whose purity is doubtful, while other wounds which are not handled in this manner quickly heal. The bleeding of a wound is much less dangerous, indeed it is beneficial, because along with the blood pathogenic bacteria are washed out by the wound.

Then, how should gunshot wounds be treated? If, for instance, we take as a starting point in our discussion a simple gunshot wound of the soft parts with a small wound of entrance and exit without severe hemorrhage, then in civil practice we would first pack the wounds with iodoform gauze in order that the irrigations used for the primary disinfection of the skin around the wound may not get into the wound and infect it. After this the skin around the wounds is painted with tincture of iodine. The packing is then renovated and replaced by a simple sterile dressing without any guttapercha inserted between the layers.

Any impermeable material would prevent the drying of the dressing and dry dressings are inimical to bacterial growth.

In war the primary disinfection of the surrounding skin at the first dressing is generally dispensed with because it can not be carried out in a thorough manner; a simple painting of the surrounding skin with tincture of iodine suffices. This has proven better than the use of solutions of mastich or other medicaments which are intended to "fix" the dirt to the skin. The idea of "fixing" the skin dirt came from Surgeon General Port. We avoid exploring the tract of the bullet with sound or finger, dilate neither the wound of entrance nor exit, much less the tract of the bullet. We do not disinfect the wound by irrigating with antiseptic solutions nor do we use drainage; however, we immobilize the wounded part with suitable dressings. We know that the value of antiseptic solutions when it comes to disinfecting wounds has been very much overrated and we also know that in most cases the germs are not destroyed; the use of such solutions causes a stimulation of the wound and therefore a resulting increase in secretions. We trust in the subcutaneous character of such wounds and treat them accordingly.

Conditions are different when we have wounds of the soft parts with large wound of entrance and still larger wound of exit, especially if at the same time large blood vessels and nerves are injured. In civil practice wounds caused by shot fired at close range resemble the shrapnel wounds of war. In such cases an active treatment is necessary. The wound must be enlarged. The track of the bullet perhaps completely dilated in order that the crushed and torn tissues which, because of deficient vitality contain the foundation of necrosis, may be removed. Our aim must be to convert the complicated wound into a simple one. By this treatment of the wound we succeed not only in making the wound aseptic but at the same time can stop any hemorrhage from injured vessels, suture torn nerves and remove foreign bodies. If necessary the wound can then be irrigated with normal saline and carefully packed with iodoform gauze.

I treated some wounds of this kind made by shotguns fired at very close range. They were handled according to these rules and recovered.

Again, in gunshot fractures the sizes of the entry and exit wounds is the decisive point. In cases where the wounds are small, even if the bone is splintered, the treatment should be conservative—plaster bandage; they should be handled exactly like compound fractures in civil practice. When the entry and exit wounds are large we must decide whether conservative treatment or primary amputation is indicated. That will be decided in these severe cases by the amount of tissue destroyed in the wound. One should not be too loath to do a primary amputation in order to perform a resection in continuity or contiguity.

This kind of gunshot fracture is like the severe comminuted fractures in civil practice; marked destruction of bone and contusion of the soft tissues. In civil practice we treat these fractures according to Volkmann's teachings with surprisingly good results, provided that it is a question of conservative treatment and not amputation. I will not speak of abdominal wounds except to call your attention to one prominent contrast in the treatment of abdominal gunshot wounds in civil practice and in war. In civil practice we open the abdomen as soon as possible; in war, this class of wound, if operated, offers a bad prognosis, because the necessary conditions for aseptic and timely operation are seldom present. On the contrary we know that spontaneous healing occurs even when the gut has been injured. The latter eventuality to be sure is not to be expected so often with the modern pointed bullet, since it often strikes transversely, does not penetrate the bowel cleanly, but causes considerable laceration. We can say the same in regard to wounds of the chest, which have offered such a good prognosis in past wars under the expectant plan of treatment and the indications for trephning are notably restricted.

In infected wounds we must make large incisions; in such cases the indications are to keep the wound open with packing, irrigations with hydrogen peroxide and frequent change of dressings. Moreover, Biers' hyperæmia often has a favorable influence. The principle of Biers' passive congestion is that it increases the natural defences of the body. In reality the congestion does good by mechanically irrigating and washing away

through the open wounds the infectious material. The tourniquet must be applied correctly, the circulation in the member must be stopped and it should become hot and edematous, the pain of inflammation must cease. The tourniquet should remain 10-20 hours and must be carefully watched. The hot air treatment has often proven valuable in the treatment of infected wounds. The wounded parts every day are placed once or twice for two hours in the hot air bath.

The serum treatment of wounds infected with pyogenic bacteria has been a failure. Recently balsam of Peru is again recommended and we find the results very good.

Disinfection of our hands is very important in the treatment of all wounds; infection of wounds from dirty hands is only too frequent. Mechanical cleansing with soap and water, with marble dust and sand insures to a great extent a diminution of the germs on the hands. By other methods of disinfection we can not hope for a lasting aseptic condition of the hands. Entirely apart from the fact that our hands will not stand prolonged scrubbing with antiseptic solutions—cracks and chaps result, and then a thorough disinfection of the hands is impossible. The soft soap in common use contains free alkali and for that reason is irritating to the skin. It should not be used regularly and continuously. A neutral soap is best. The hot water and alcohol disinfection methods of Fürbinger and Ahlfeld without antiseptic solution are most generally used and indeed are thorough enough.

Heussner recommends washing for five minutes with iodine-benzine. Others speak highly of disinfection with pure alcohol, the skin wrinkles, becomes hard and for some time the number of germs is reduced to a minimum. Recently an alcoholic soap has been manufactured by the wholesale chemist, Marquard. This soap contains 80% alcohol. According to researches in this hygienic institution, streptococci, straphylococci, diphtheria bacilli and the colon bacillus were destroyed inside one-half minute. So this soap has much to recommend it for hand disinfection. The soap is put on dry and then sterile water is poured on.

Covering the hands with impenetrable coatings of wax, resin or rubber, has proven worthless, since the coating tears and opens.

Sterile rubber gloves solves the entire problem of hand disinfection in the simplest manner and are indispensable.

The expense of wound treatment increases to be sure and in our clinic amounts to 2,500 marks (\$825) annually. I make both the surgeons and sisters wear rubber gloves in all operations, whether septic or clean, also in all dressings, so on that account the number used is great. Small tears are repaired by the sisters with pieces from old gloves. In order to protect the rubber gloves it is a good idea to put cotton gloves over them. Rubber gloves can be sterilized by steam at 100°C for one hour 6 or 8 times; after sterilization they are covered with talcum; they are injured by boiling.

Before putting on rubber gloves the hands must be thoroughly scrubbed and dried. In order to avoid infection of the hands all septic wounds should be handled with rubber gloves.

The skin in the operation field must be disinfected as thoroughly as our hands. Formerly the method of Fürbinger was used for the field of operation. At present the skin is washed with alcohol soap, with alcohol, with iodine-benzine, and last, but not least, is painted with iodine as practiced by Grossich. If a general anesthetic is necessary we prefer if possible to use the chloroform-ether-oxygen mixture in the Roth-Träger apparatus which allows an accurate dosage of the anesthetic. It is the most dependable of all anesthetic apparatuses and if the anesthetist is familiar with the method and feels his responsibility, then general anesthesia has lost most of its danger.

In order to hasten anesthesia, Klapp recommends using an Es-march bandage on the arm or leg in order to cut down the circulation. The method is not good, since thrombosis occur oftener in the limbs thus treated, and besides the blood laden with CO₂ and other katabolic products in the part have a deleterious effect on the heart when they reach it. In small operations extended use should be made of the inhalation analgesia. Analgesia is present after 10-20 inhalations. In many cases local anesthesia can be used. It should be understood and used by all surgeons. Infiltration and conduction anesthesia, as practiced by the proficient enable the surgeon to perform extensive operations, such as

resections of the upper and lower jaw, thyroidectomies, herniotomies, amputations and resections of the joints, almost painlessly.

Venous and arterial anesthesia have not been tried out very much in a practical way. At the present time novocain is the best drug for inducing local anesthesia, since it is only slightly toxic, is non-irritating and causes no dilatation of the vessels. If suprarenin is added the anesthesia is sufficiently prolonged. As much as 150-250 ccm. of a $\frac{1}{2}\%$ solution have been injected without any form of trouble; $\frac{1}{2}\%$ novocain solution is highly recommended in the reduction of fractures and dislocations. Spinal anesthesia can be used for all operations on the lower extremities, even as high up as the umbilicus.

The technic demanded is very exact and not easy to learn. We have practiced spinal anesthesia in our clinic nearly 1800 times without serious complications, aside from occasional severe headache and in two cases, an abducent paralysis, which disappeared. On the other hand a mortality of 1,200, according to other sources 1,300, permanent paralyses of extremities and gangrene have been reported, so that this form of anesthesia should not be recommended for general use.

For spinal anesthesia we think tropacocaine the best drug. In the presence of suppuration, spinal anesthesia must never be used. In severe hemorrhage we think of a substitute for the blood. The best thing for this is saline solution, intravenously, subcutaneously, extraperitoneally or per rectum; at the same time we should use oxygen inhalation, the recumbent posture and auto-transfusion after complete arrest of the bleeding.

Owing to the advances made in vascular surgery, transfusion of blood has made rapid progress. Direct transfusion by sewing the artery of the donor to the vein of the recipient apparently minimizes the former great dangers of thrombus formation.

Extracts from Home and Foreign Journals.

SURGICAL

CESAREAN SECTION UNDER LOCAL ANESTHESIA.

Dr. J. Clarence Webster stated that about ten years ago he began to use Schleich solution No. 2 for cesarean section in the Presbyterian Hospital, using it only for vaginal cesarean section, the cases being those in which that operation was considered advisable, namely, those of rigid cervix or of hypertrophic elongation, with eclamptic phenomena. He was pleased with the results and operated over twenty times vaginally with a local anesthetic. Then he extended the use of Schleich solution to other operative procedures. For years he had employed it in abdominal and vaginal operations of all kinds. The longest operation he had ever performed was one in which he removed a fibroid tumor that weighed eighty-seven pounds, the woman weighing only eighty-five pounds after the tumor was removed. She was in desperate condition and made up her mind after ten years of waiting to have this large mass removed. He operated on her under the use of Schleich solution No. 2, taking two hours and three-quarters to remove the tumor, and only in the latter half hour was it necessary to give her a whiff of ether or chloroform when there was some very painful or sensitive area to work on. The patient recovered. In 1909 he first used local anesthesia for abdominal cesarean section. On January 27 he completed his sixteenth case. These operations had been done under local anesthesia for deformed pelvis, for tumors, and in several cases of placenta previa. The anesthetic employed was Schleich solution No. 2. Within the last two years he had been using novocaine. Some of these sixteen patients were in bad condition, having kidney or lung lesions which rendered them unfit for the safe administration of a general anesthetic. It must be evident to all who do major surgical work of any kind that a procedure which would enable a pa-

tient to go through an operation with comparative ease was very valuable and was superior to one that entailed long anesthesia with ether or chloroform.—*N. Y. Med. Record.*

TREATMENT OF WHITLOW.

Beverly Robinson, in the *New York Medical Journal*, recommends the use of equal parts of glycerin and a saturated solution of magnesium sulphate. Aseptic gauze should be saturated with this mixture, then covered with thin rubber tissue and a little absorbent cotton, and held in place on the finger with a narrow gauze bandage. During the day this application may be removed advantageously for a while, and the finger soaked in hot water and borax (half an ounce of borax to one pint of hot water) at least during fifteen to twenty minutes two or three times in twenty-four hours. The borated solution is very useful in reducing local pain and redness, and probably limits the spread of the disease. Prior to its employment the author used a half saturated solution of boric acid in water, with very poor results. When the felon is well on towards recovery, after several weeks of wet dressing and soaking, oxide of zinc ointment applied at bedtime, or during the day also, is notably beneficial in curing what still remains, although slight, of pain, redness and swelling.—*The Med. Brief.*

ANOCIASSOCIATION.

Pannett (*British Journal of Surgery*, October, 1914) concludes as follows, after a very fair discussion of Crile's method:

Afferent impulses set up by incision of the abdominal wall in the linea alba can be prevented from reaching the nerve centers by local infiltration with novocaine as recommended by Crile.

When the incision is not in the middle line, these impulses can be blocked only by anesthetizing the nerve trunks as well as employing local infiltration to render the nerve-endings insensitive. This procedure may necessitate the waiting of some minutes between the injection of the anesthetic and the severance of each

layer. If peri-neural injections are employed, 1 per cent novocaine must be used.

Afferent impulses resulting from manipulation of the viscera have in general a more pronounced effect upon the vasomotor center than those resulting from the opening of the abdomen and the retraction of the edges of the wound.

To bring about a condition of anociassociation of the nerve centers, it is as essential to cut off impulses ascending from the viscera as it is to block those coming from the abdominal wall.

Afferent impulses set up by manipulation of the stomach, intestine, and the attachments of these viscera, may be blocked by local anesthetization of these attachments.

The tone of the abdominal muscles is increased by the manipulation of the viscera or by dragging upon the parietal peritoneum.

This reflex rigidity can be eliminated by locally anesthetizing the abdominal wall and by blocking impulses from the viscera.—*The Therapeutic Gazette.*

SURGICAL TREATMENT OF ACUTE PANCREATITIS.

Dreesman (*Deutsche Zeitschrift für Chirurgie*, Bd. 129, 1914) sums up his experience with acute pancreatitis by saying that in all severe cases, also in all light cases in which gallstones are associated, operation should be done as early as possible. In cases in which the symptoms are mild operation should be delayed with the condition that if no improvement occurs within twenty-four hours operation should be proceeded with. In operating the pancreas should be exposed as complete as possible by going through the gastrocolic omentum. The area of the pancreas should be drained through two glass tubes for at least fourteen days, and the tubes should not be removed so long as the patient shows any objective or subjective disturbances. In every operation the gall-passages should be examined, and any abnormal condition there corrected as soon as the condition of the patient will permit.—*The Therapeutic Gazette.*

DEATH FOLLOWING INTRASPINAL INJECTION OF NOVOCAIN.

Scandola's patient was a priest, 69 years old, with signs of a mild myocarditis so that when a herniotomy was undertaken the lumbar route for anesthesia was chosen rather than that by inhalation, and only a small amount of the novocain solution was injected. The patient bore the operation well and seemed to be in the best of condition that night but the next day there was some delirium and signs of paresis of the intestines gradually became evident, with fatal outcome the third day. The euphoric delirium had continued all the time and necropsy showed that there were no signs of peritonitis. Merusel reported last year the death of two patients of 75 and 80 after intraspinal injection of a small dose of novocain. In several other elderly patients there was sub-delirium, requiring constant surveillance, but the patients recovered after four or five days. Scandola has also had phenomena of collapse in an elderly patient who recovered finally under stimulants. The spinal nervous system seems from these and other data cited to be peculiarly susceptible in the elderly.—*The Journal of the American Medical Asso.*

LOOSE BODIES IN JOINT.

Boks relates that the discovery of two "joint mice" in one knee of a patient started a systematic investigation of the joints of all the cadavers he had occasion to examine. He also studied the literature on the subject. In his case the man of 74 was being treated for a gonorrheal stricture when he called attention to chronic pain and discomfort in his left knee. It was evidently the seat of a deforming arthritis, but two loose bodies were found in it. The microscope showed that the loose bodies did not show the changes of deforming arthritis, evident in the joint itself. There was a history of a contusion of this knee thirty-five years before. This probably induced an infectious process and casting off of the two scraps of bone and cartilage. Their presence in the joint or other causes started later the deforming arthritis. No

other joint was affected. He thinks this case throws considerable light on "joint mice" in general as there was no evidence of proliferation of new bone but merely of hyaline cartilage tissue, alike in structure in both.—*The Journal of the Am. Med. Asso.*

EXOPHTHALMIC GOITRE AND ITS TREATMENT.

The different types of goitre are considered, their development, course, symptoms, pathology, physiology, causes, complications and treatment.

The irregular types of exophthalmic goitre are also discussed.

The article is one that should be read by every ophthalmologist, as well as by all general surgeons and physicians, as it sums up the subject admirably and succinctly.

His recommendations as to the treatment in these cases are as follows:

Rest and good hygiene are essential for the cure of any thyroid disease; the antithyroid serum is the most efficacious of all conservative methods for many cases in the early stages of hyperthyroidism and for some of those in the exophthalmic group. In dosages of $\frac{1}{2}$ to 1 c.c. it is harmless, but if its exhibition intensifies the symptoms it should be discontinued. When conservative methods fail after a month's trial, the ligation of one or more thyroid vessels should be practiced, or less frequently and only in selected cases, the excision of half the gland. Local anesthesia is preferable to general narcosis. Ligation of one or more of the chief thyroid vessels will cure a large proportion of all types of hyperthyroidism. It is safer, but much slower in its effects than hemithyroidectomy. For exophthalmic goitre, or the most advanced and serious form of hyperthyroidism ligation of all four thyroid vessels seem to offer better hopes of cure than the more radical operation. Hemithyroidectomy seems indicated especially in the third or hyperthyroid stage of the disease rather than in the fourth or that of exophthalmic goitre, and in patients over twenty-five years of age who possess asymmetrical goitres of considerable and not small size.

About 25 per cent of all cases of hyperthyroidism are only improved by hemithyroidectomy, and some 10 per cent of them are not benefited at all or made worse and the general operative mortality is at least 5 per cent.

Surgery at the best is but a rough approach to the means which a better knowledge of physiology and of organ therapy should provide for the relief of these patients—*N. Y. State Journal of Medicine*.

RELATION OF MOVABLE KIDNEY TO TRAUMA.

Theodor Bratrud, Warren, Minn., *Railway Surgical Journal*, December, 1914. Various authorities are quoted, for and against the possibility of dislocation of the kidney by trauma. Peak and others report circum-renal hemorrhage (we are grateful that there is one man who says circum—and peri—) which, with resulting decapsulation is a plausible method of action of trauma in loosening a kidney from its supports. Many surgeons deny the possibility of traumatic loosening of a kidney. Peak reports one case in which a kidney was found loose after an injury and had not been so before. (Note. We have encountered a number of cases in which third degree movability of the kidney apparently followed injury. In some of these, there was positive evidence that the kidney had previously been in this condition; in others there was no record of previous examination. We recall a case in which a surgeon did a nephropexy for movability which we personally knew did not exist. Later the case was referred back to us "because the kidney had become loose again"—but it was just as firm as it had been before and after the nephropexy. Without denying the possibility of traumatic cause of movable kidney, we can say with certainty that we have never been able to produce a single case as evidence. Even such a report as Peak's is not positive evidence for it is well known that the condition of the kidney can not always be determined at a single examination or even several, without anesthesia).—*Buffalo Medical Journal*.

THE PRACTICAL APPLICATION OF THE LUETIN TEST.

A vast amount of investigation has been done in the past two years regarding the value of the luetin test in syphilis. The results of the investigators is summarized by Noguchi (*N. Y. Med. Jour.*, August 22, 1914) as follows:

Primary Syphilis. The reaction is present in less than thirty per cent of the cases and the intensity of the reaction is usually very mild.

Secondary Syphilis. The reaction was reported positive in forty-seven per cent of 630 cases. The reaction is usually mild.

Tertiary Syphilis. The reaction was found in about eighty per cent. of the cases.

Congenital Syphilis. The reaction occurred in about seventy per cent of the cases. The reaction becomes more distinct after energetic treatment.

Syphilis of the Nervous System. The reaction is less frequently present in acute syphilitic meningitis than in the parenchymatous, such as general paresis and tabes, where it has been reported positive in about sixty per cent of the cases.

Visceral Syphilis. The reaction is present in nearly ninety per cent of the cases, especially is it marked in cases of aortic insufficiency.

In comparing this reaction with the Wassermann reaction it has been shown that the Luetin reaction may be positive when the Wassermann is negative and vice versa. Both reactions may, however, be present in the same cases, especially in congenital syphilis and general paralysis. From statistics it is seen that the Wassermann reaction is much more constant among the primary and secondary cases as well as in general paralysis, but the reverse is the rule in chronic cases, especially in those undergoing treatment.—*Medical Review of Reviews.*

MAGNESIUM SULPHATE IN TETANUS.

Schutz has not had any experience with tetanus, but he calls attention to his experimental research on magnesium sulphate

which demonstrated that the drug has a special influence on the heat regulating centers. In rabbits the temperature invariably dropped parallel to the action of the drug otherwise—it was not a consequence of its anesthetic action but a parallel manifestation. The symptoms of paralysis were invariably ushered in by a steeper drop of the temperature. These facts repeatedly confirmed on rabbits suggest that the temperature might prove in the same way in the clinic a sensitive and reliable index of the action of magnesium sulphate. By systematic temperature curves it may be possible to standardize the dosage of the drug according to the indications in the individual cases.—*The Jour. of the Am. Med. Asso.*

TREATMENT OF GANGRENOUS WOUNDS WITH ARTIFICIAL GASTRIC JUICE.

The use of both natural and artificial gastric juice in the treatment of ulcers and suppurative processes is quite old, especially the first named which was applied for this purpose long before the nature of the secretion was understood. During the present war an attempt has been made to introduce the use of an artificial product on a large scale for the treatment of foul gangrenous lesions. Freund of Vienna reported his experience before the Royal Imperial Medical Society of Vienna last December (*Münchener medizinische Wochenschrift*, January 12). To 0.1 or 0.2 per cent solution of hydrochloric acid he adds pepsin to make 2 to 5 per cent. The wound surface may simply be irrigated or dressed with moistened gauze. The solution should not have stood for over 48 hours and can not be heated above 45° C. (113° F). It may be used twice daily after previous disinfection with hydrogen peroxide. If nerves or vessels have been exposed by the gangrenous process or the traumatism itself, these structures should be protected from the solution by petroleum ointment. At the same meeting Gagstatter stated that he had used the solution in eighty cases, often with astonishing results. The necrotic tissues were promptly removed.—*Medical Record.*

BONE GRAFTING.

Fred H. Albee, New York (Sur., Gyn., Abs.) after an exhaustive article dealing with the theory and practical technique of bone grafting in orthopedic surgery, an article which covers such conditions as paralytic scoliosis, spina bifida, fracture of the spine, tuberculosis of the sacroiliac joint, ununited fractures, paralytic and congenital dislocation of the hip and clubfoot, comes to the following conclusions concerning this recent addition to the procedures of bone surgery:

1. My experience as to the trustworthiness of the bone-graft, as surgical agent, when taken with its enveloping membranes (periosteum and endosteum) and contracted with bone, has been borne out by Murphy, McWilliams and others, who have obtained practically 100 per cent of successes. In my last one hundred cases the successes have been 100 per cent.

2. The endosteum, marrow substance, and periosteum should be included on the graft, as they play a most important role in aiding to establish an early and sufficient blood supply from the recipient tissues to the cortical part of the graft. The endosteum is also actively osteogenetic as well as the inner layer of the true peritosteum.

3. A rapid and complete union between graft and recipient bone should be in many cases enhanced by the interposition of numerous small gifts in which the periosteum may be disregarded because of the easy access of blood supply to their interior osteoblasts. These coalesce with each other and also with the recipient bones and the large graft.

4. The living bone-graft has certain bacteria-resisting properties, as evidenced by two of my animal experimental cases where sepsis occurred and parts of each graft became united to the recipient bones, while the rest of the transplant succumbed to the infection and requestrated.

5. The bone-graft apparently acts always as a stimulus to osteogenesis to the bone into which it is ingrafted or contacted.

6. The bone-graft when well contacted becomes immediately adherent to the recipient bone by newly formed tissue, which changes to solid bone within four weeks' time. This, together with its bacteria-resisting property strongly favors, in the author's opinion, the substitution when feasible of the bone-graft in place of all metal internal splints, especially when it is appreciated that metal has the opposite effect to the graft, in that it inhibits callus formation, produces bone absorption, and favors infection.

7. The dowel, the inlay and wedge bone-graft afford a means of repairing and remodeling the skeleton which the surgeon has not hitherto possessed.—*The Lancet-Clinic*.

TRANSPLANTATION OF A TESTICLE FROM THE DEAD
TO THE LIVING BODY.

G. F. Lydston, believing that obstinate chronic skin diseases, notably psoriasis, were a promising field for the therapeutic administration of the sex gland hormone via implantation implanted in the right scrotal sac of a man suffering from psoriasis, a testicle—with the epididymis excised—removed from an apparently healthy subject about twenty-one years of age, dead thirty hours before from contact with a live wire. The operation was done ten hours after removal of the testis from the dead subject—i. e., forty hours after death. The post-operative course was uneventful. The wound healed by primary union, and there was very little swelling about the site of the implantation. The highest temperature recorded was 100 degrees F. On the third day after the implantation improvement was noted in the psoriasis. The eighth day after the operation the lesions were so improved that they could scarcely be recognized as psoriasis—*Medical Record*.

MEDICAL

TUBERCULOSIS OF THE GENITOURINARY TRACT.

Dr. N. P. Rathbun (*Long Isl. Med. Jour.*, January, 1915) emphasizes two facts: First. The importance of keeping our "ear to the ground" for cases of early renal tuberculosis. Young adults who come to us complaining of frequency of urination and polyuria, worse at night, should be looked upon with the gravest suspicion. Many cases of incipient renal tuberculosis are treated for months with a diagnosis of diabetes insipidus, chronic interstitial nephritis, neurasthenia, or some other equally incorrect diagnosis while valuable time is being lost. Secondly. The presence of pus in the urine is a serious matter and it is of vital importance to determine its source, which can always be done, and its cause, which can be done in a great majority of cases.—*International Journal of Surgery*.

MENTAL AND NERVOUS DISORDERS ASSOCIATED WITH PELLAGRA.

1. Mental disturbance occurs in about 40 per cent of all cases of pellagra. Such disturbances are more frequent with repeated attacks. Children are practically exempt. They are most common in men between 21 and 40, and women about 41 to 60.

2. About 95 per cent of the mental disorders are the direct result of the pellagrous intoxication, and although the mortality in such cases is much higher than in cases without such disorder, yet the mental disturbance will fully recover if the patient survives. They correspond to similar disturbances in other somatic diseases and in such case are often described as not "insanity." The remaining 5 per cent are examples of mental disorder primarily dependent on the individual's make-up, or else are merely concomitant.

3. Faulty nervous organization, including inadequate mental adaptability, seems to be associated with a predisposition to pellagra. This seems to afford the most satisfactory, even if only partial, explanation of the extraordinary frequency of pellagra arising among the insane, the increased frequency of functional psychoses and psychoneuroses and of nervous disease of the congenital anomaly type among pellagrins as compared with more normal individuals.

4. Chronic "insanity" due strictly to pellagrous intoxication, if it occurs, is rare.

5. Chronic nervous disease as the result of pellagra, if it occurs, is exceptional.—*The Post-Graduate*.

DIPHTHERIA TOXIN AND BLOOD PRESSURE.

Of considerable clinical importance is the problem as to what effect the diphtheria toxin has upon the blood pressure. This problem has been studied by H. Zondex (*Zeitschrift für klinische Medizin*, Vol. 81, Nos. 1 and 2), who found that the blood serum of rabbits acutely poisoned by the diphtheria toxin causes a reduction of blood pressure when injected into healthy rabbits. In a parallel set of experiments normal rabbit serum had no such effect. The blood serum of rabbits in which a nephritis has been set up by the injection of uranium or chromium salts, causes a distinct rise in the blood pressure in rabbits in which the blood pressure had been lowered by the diphtheria toxin. The degree of the blood pressure reducing power of the diphtheria-treated rabbit sera depends upon the length of time to which these sera have been under the influence of the diphtheria toxin. The maximum influence of this power is reached in ten hours, and at the end of twenty hours is a marked reduction. The effect of the diphtheria serum upon the blood pressure is more prolonged if this serum is removed from a rabbit in which a nephritis has been set up. In such an animal the histological changes in the kidney are more pronounced after twenty hours than after ten hours. In all probability a coincident nephritis tends to counteract and to

compensate for the blood pressure reducing effect of the diphtheria toxin. The above mentioned experiments have an eminently practical bearing inasmuch as they indicate the need of blood pressure observations as an aid in gauging the intensity of a diphtheritic infection and also as a means of enabling one to suspect an inter-current nephritis.—*Medical Record*.

THE INFLUENCE OF PITUITRIN ON RESPIRATION.

Nice, Rock and Courtright in the *American Journal of Physiology* of September 1, 1914, reach these conclusions:

1. The characteristic effect of pituitary extract on respiration is an increase in the depth followed by a shallowness and a decrease in the rate.
 2. In some cases, however, the increase in the depth of respiration is followed by shallowness and an increase in the rate.
 3. The effect of pituitrin on the respiratory mechanism occurs synchronously with that on the circulatory system. The effect, however, on respiration passes off sooner than that on circulation.
 4. After a few injections of pituitrin, the respiratory mechanism becomes immune and the characteristic responses are not elicited.—*The Therapeutic Gazette*.
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THE HEN AS A POSSIBLE TYPHOID CARRIER.

The problem of the carrier in various infectious diseases has long vexed the sanitarian who is bent on discovering every possible mode of transmission and every portal of entry for the pathogenic organisms. Human carriers of typhoid and diphtheria germs, themselves immune to attacks of the malady, are now watched for in nearly every community, and the danger which they represent as a latent source of infection is clearly recognized. Doubtless, many of these possibilities for spreading disease without the presence of detectable symptoms are still unrecognized. In

the case of the *bacillus typhosus*, it has been shown that some of the lower animals may, by experimental methods, be made typhoid carriers; and attention has lately been directed to such animals as might be expected to become carriers by reason of their environment or habits. Mitchell and Bloomer of the bacteriologic laboratory of the University of Missouri have accordingly pointed out that the chicken is a domestic animal which might often come into contact with typhoid excreta. If given an opportunity this animal will readily partake of feces, and the practice may be observed in a locality in which open closets abound. The droppings of chickens are so widely scattered that they could become a serious source of danger should they contain typhoid bacilli. Mitchell and Bloomer remark that the mechanical transference of typhoid bacilli on the feet and bill of a chicken does, without question, occur; but such transmission can not be called "carrier transmission," which refers to the harboring and multiplication of the germs within the body. By various methods of administering *bacillus typhosus*, either in stock cultures or in infected excreta, to hens, they have attempted to follow the fate of the micro-organism and particularly their possible reappearance in the droppings of the fowls. From the work of the Missouri bacteriologists it would seem that the hen is highly resistant to the typhoid organism. It not only fails to take the disease, but apparently can not be made a carrier by feeding with the bacilli or by intravenous inoculation. The data are perhaps too meager as yet to permit a final pronouncement; but the preliminary indications at any rate are negative.—*The Journal of the Am. Med. Asso.*

VOMITING.

In paroxysmal vomiting of chronic, recurrent character, where no organic disease of stomach is discoverable, adrenal gland treatment is frequently of value.

Carbon disulphide, applied for fifteen seconds over the epigastrium, will produce the same effect as counter-irritation with a strong mustard plaster for half an hour.—*The Medical Brief.*

THE USES OF PETROLEUM IN THE TREATMENT OF CONSTIPATION
AND OTHER DISEASES IN INFANTS.

The internal administration of crude petroleum for medicinal purposes dates from very early days, but the use of the more refined oils is of recent origin. Toward the end of the last century, it was largely administered in the form of an emulsion combined with hypophosphates under the mistaken belief that it possessed nutritive properties and could serve as a substitute for cod liver oil. (Eric Pritchard, *American Practitioner*, July, 1914.)

In 1899 it was proven that petroleum was not absorbed from the bowel, that it has no nutritive properties, and that the only imaginable therapeutic purpose it could serve was as a substitute for mucus.

In 1906 the author began using paraffin as a rational specific in the treatment of constipation in infants.

Petroleum emulsion was found to be extremely useful in the treatment of all forms of indigestion in infants.

Its efficacy in these conditions may depend on:

- (a) Its lubricating properties.
- (b) Its antiseptic properties.
- (c) Its cleaning up effect on the mucous membrane.

Petroleum emulsion is a most useful vehicle for all sorts of drugs, soluble as well as insoluble, which are prescribed for infants. It may be given with perfect safety in very large doses.—*Medical Review of Reviews*.

THE CAUSE OF RECURRENT MALARIA.

By latent malarial infection is meant one in which the plasmodia of malaria may be demonstrated to be present in the blood of an individual, but in which no clinical symptoms of the disease of sufficient gravity to attract attention are to be observed. The term should not be confined to those instances in which no symptoms of malaria have ever been present, for it the parasites be present in

the blood in recurrent cases, between the attacks the disease is as truly latent as it was before the initial one.

By recurrences are meant the appearance of symptoms due to the same group of parasites that caused the original infection and not to a reinfection by another group.

By intracorpuseular conjunction is meant the complete and permanent union of the protoplasm and nucleus of two young ameba within the erythrocyte. It is absolutely necessary to the maintenance of malarial infection in man, and in these instances in which it does not occur, the plasmodia undergo a sexual sporulation for a limited time and then perish, thus leading to spontaneous recovery. It is present most typically in those cases in which the clinical symptoms are most severe, and is present in all the varieties of malarial infection, although most easily observed in the estivo autumnal infections.

Intracorpuseular conjugation is the chief cause of the maintenance of malarial infection. It maintains malarial infection by producing a resting, or zygote, stage of the plasmodia, within the human body. The zygote is resistant to quinine and other injurious influences. It is the cause of latency and recurrences of malarial infection, the zygote stage remaining dormant or "latent" until conditions are favorable, when it gives birth to several young plasmodia, thus causing a recurrence of the infection.—*Medical Review of Reviews*.

OBSTETRICAL

THE CHOLESTERIN IN THE BLOOD DURING PREGNANCY.

Huffman examined a large number of normal men and women to ascertain the normal cholesterin content of the blood, and then compared with this standard the findings in women at different periods during a pregnancy. It gradually increases during gestation, reaching its highest point in the last months, and then it drops to normal in eight or ten days, irrespective of lactation. The blood from the umbilical cord shows a low cholesterin con-

tent, regardless of the findings in the maternal blood. The maximum cholesterin content was found in eclampsia. It does not seem to vary with menstruation but rises during general anesthesia. It is low with cancer.—*The Journal of the Am. Med. Asso.*

TWILIGHT SLEEP.

Humpstone, in the *Long Island Medical Journal* for December, 1914, reaches these conclusions, which seem conservative:

1. Twilight sleep is a scientific possibility in 90 per cent of women.
2. It is so delicate and exacting a procedure that it is likely to be employed very little outside of a hospital.
3. It is not a panacea for painful childbirth, in that it is not practical for use by the general practitioner, because the remuneration for the average obstetric work is too low to permit him to undertake so arduous and time-killing employment, if he is to exist and maintain his position in the community.
4. Everyone who intends to employ this method of narcosis should observe several cases in the hands of experienced men before he undertakes it, in the interest of his own reputation and the safety of his patients.—*The Therapeutic Gazette.*

CITRITE SALTS IN CONGESTIVE DYSMENORRHEA.

B. L. Spitzig has suggested that increased viscosity of the blood takes part in the production of dysmenorrhea. The causative factor is faulty hygiene, defective elimination, nitrogenous overindulgence, sedentary occupation, and tight lacing. At the time of uterine congestion, the blood in this organ is more viscid, and with the accompanying stasis there is greater infiltration of serum into the neighboring tissues. This induces a change in the chemical equilibrium of the endometrial cells by causing the cellular colloids to absorb more serum and transforming this gelatinous material into a viscid mass. The effects are greater distention of the spongy layer and increased vascular stasis and mucus production,

with the consequent shedding of fibrinous and thrombotic membranes. With this morbid state the ovum can not readily engraft itself, and sterility is a frequent sequel. Reducing the viscid blood inhibits the formation of clots and membranes; stasis is diminished and excessive edema of the endometrium retarded. Bleeding through the glands is increased, and diapedesis through stroma and epithelium lessened. In regard to treatment, nitrogenous food raises the viscosity of the blood, and accordingly is restricted before the menses. Catharsis depletes the portal circulation, and at times a hot compress is applied for the purpose of relaxation. The important procedure is the reduction of viscosity through the use of sodium citrate, 20 grains three times daily, during the week or two preceeding the expected period. The mode of action is peculiar to the citrates. Diuresis does not explain the results. It seems probable that the alkaline citrate neutralizes carbonic acid and other waste products and increases oxidation, thus proving to be the most efficient method for preventing cellular edema and diminishing viscosity.—*Medical Record*.

SENSITIZED BACILLI IN UTERINE ABSCESS.

Broughton-Alcock, in the *British Medical Journal*, reports a case of a woman of 55 years in whom, after a hysterectomy, an abscess had developed from which pus was being continually discharged through the vagina. Seven injections of a culture of organisms made from the pus, which was found to contain bacillus proteus, were given at intervals of three or four days. The organisms had been killed by heating to 60° C. for an hour before administration. After this series of injections, the organisms were found in the vaginal pus in lessened, but still considerable numbers, in pure culture. A sensitized vaccine was then prepared from the patient's blood and injected once weekly for four weeks in doses of 400 to 1,000 million. The discharge of pus now completely ceased, in spite of the fact that but little effort had been made to combat the suppurative condition locally with antiseptics.—*The Medical Brief*.

DYSMENORRHEA.

Siredey and Lemaire, in *Paris Medical* for April 25, 1914, state that all acute attacks of dysmenorrhea require anodynes. They recommend hectal suppositories, or a sedative enema, for example:

Decocti lini-----	℥ v (150 grams).
Antipyrinæ -----	gr. xv. (1 gram).
Tincturæ belladonna foliorum-----	gtt. v-x.
Tincture opii -----	gtt. xv-xx.

M. Sig.: To be heated to 50° C. on the water bath before use.
—*The Medical Brief*.

THE WET NURSE IN HOSPITAL PRACTICE.

The value of human milk in the development of infants has naturally called attention to the importance of providing wet nurses in institutions caring for infants. The exact status of the wet nurse in hospital practice has not been determined from the administrative standpoint, but for all practical purposes there is a consensus of opinion that the wet nurse is an essential factor in hospitals devoted to the interests of babies.

Frank Spooner Churchill (*J. A. M. A.*, November 21, 1914), presents his views upon this subject, which may be epitomized as follows:

A comparative study of two groups of infants of unequal age and weight, the older and heavier group fed exclusively on cow's milk, the lighter and younger group on part human and part bovine milk, shows that the mortality rate in both groups is the same.

A study of two groups of the same age and weight, fed as above, shows a mortality lower by 8 per cent in the group fed partly on breast milk.

Infants seriously but not hopelessly ill, whose diet consisted of at least half breast milk over a critical period, show a mortality of but 3 per cent.

Infants somewhat less seriously sick, whose diet consisted of less than half breast milk over a critical period, show a mortality of 50 per cent.

Whenever possible, therefore, the diet of such seriously ill babies should consist of at least half breast milk throughout the critical period of their illness.

The use of a limited supply of breast milk in a large infant hospital, over a period of three years, has not reduced the infant mortality of that hospital during that period. The mortality, however, has not risen, notwithstanding the fact that during the same period there has been a steadily rising infant mortality in the city in which the hospital is located and from the infant population of which the hospital draws the patients.

Breast milk is not a panacea for all the ills of infancy, desperately ill infants showing a high mortality even when fed exclusively this kind of food.—*Med. Review of Reviews*.

THE USE OF SCOPOLAMINE-MORPHINE IN LABOR.

The action of scopolamine is chiefly upon the central nervous system. It quiets the cerebrum and diminishes the perception of pain, without apparently influencing the contractility of the uterus.

Clinically, the patients may be divided into three groups: 1, patients in whom amnesia and analgesia is obtained; 2, patients in whom analgesia without amnesia is obtained; 3, patients who entirely fail to respond to the treatment.

Treatment is begun only when the patients shows definite signs of active labor. The patient is then put to bed in a dimly lighted room and an initial dose of 0.00045 gram, or approximately $\frac{1}{160}$ grain of scopolamine hydrobromide is injected intramuscularly. This is preceded by a hypodermic injection of one-half grain of morphine-narcotine meconate. The effects are now carefully observed with special reference to pulse, respiration, pupillary reaction, fetal heart, and intensity and frequency of uterine contractions. A second injection of scopolamine is given about one hour after the first. About half an hour after this injection, memory

tests are brought into play. The patient is shown some object, such as a doll or a watch, and a short while later she is asked whether she saw the particular object in question. She may be asked whether she had a hypodermic injection. Any test of memory will do. The repetition of injections is now primarily gauged by the degree of amnesia present. The interval between injections, although at times it may be necessary to give only two or three, or many as twelve or fourteen.

After the completion of the first stage, with the presenting part on the perineum, one c.c. of pituitrin is often given to hasten delivery. As soon as the child is born, the cord is quickly ligated and severed and the infant is removed to another room. The mother, after being made comfortable, generally falls into a deep sleep, to awaken from two to four hours later usually in complete ignorance of the fact that she has given birth to a child.

Medical Review of Reviews.

Editorial

PUBLISHER'S NOTICE—The Journal is published in monthly numbers of 48 pages at \$1.00 a year, to be always paid in advance.

All bills for advertisements to be paid quarterly, after the first insertion of the quarter.

Business communications, remittances by mail, either by money order, draft, or registered letter, should be addressed to the Business manager, C. S. Briggs, M. D. corner Summer and Union Streets, Nashville, Tenn.

All communications for the Journal, books for review, exchanges, etc., should be addressed to the Editor.

POSTGRADUATE WORK.

An editorial in the Medical Record of February 13, 1915, taking issue with an editorial of the Long Island Medical Journal in which the fear was expressed that unless the American public shifted their sympathy to Germany rather than the allies, American students would not be wanted in Germany, takes the stand that American dollars will look better than ever to the Austrian and German Privatdozent after the war and that American post-graduates will be more welcome than ever. This is probably true enough, because the medical profession in those countries, at no time wealthy as a class, will be more impoverished than ever by the war and only too willing to earn any extra money.

However, we are inclined to take issue with this same writer when he states that American post-graduate study is as good or better than that abroad and that specialties are more strictly followed here than abroad.

Without comparing the relative merits and abilities of the American and German professions we boldly assert that the class of men who *as a rule* give post-graduate instruction abroad is better than that of our own post-graduate instruction; that in spite of traveling and other expense incident to a trip abroad, more work can be done under specialists abroad with international reputations for less money than in New York, Chicago or any of the other places where there are large clinics; and that in

Vienna at least specialism has reached a stage in its development which makes one wonder whether extreme specialism is the best thing after all.

Vienna has long been considered the center of post-graduate instruction abroad, and having been there myself, can testify that the courses offered are good, are cheap, are for the most part concentrated in one large hospital so that a minimum amount of time is wasted in going from one course to another, and that the instructors are often men of international reputation, such as Ghon, Stoerck, Schlesinger, Kovac, Finger, Falta and others. Some who have studied in both Berlin and Vienna prefer Berlin. So the courses in Berlin must be good also.

The courses open to post-graduates in this country may be just as good or even better than those abroad, but in looking over circulars advertising these courses the expense per course has always seemed unusually great; with a few exceptions the instructors have been men without national, much less international reputations; and the courses have been so scattered over large cities, which means a great loss of time for those who wish to take general work.

If the editorial in the Medical Record is correct in its assertions then we are humble in our apologies, not only to the Record but also to the American post-graduate schools. We think post-graduate courses should be a part of the curriculum of every medical school and that lack of clinical material for such courses should make us wonder whether the college has enough clinical material to offer the best advantages to the undergraduate student.

—W. T. B.

PROHIBITION.

We do not approve of the Harrison Act insofar as it applies to physicians as was expressed in the last issue of the Journal, and even since writing that short editorial we have personally been made to feel the inconvenience of its enforcement. That the law will do a great deal of good and will do much to prevent the unlawful traffic in narcotics can not be doubted. We advocated a

law of this nature several years ago in the Journal as the most important initial step in the fight against the liquor business and at the same time suggested that whiskey, brandy, absinthe and other drinks containing large amounts of alcohol be placed under federal control. All drinks containing large amounts of alcohol are drugs, and while not quite as far reaching in their bad effects as morphine, cocaine and heroin, or their derivatives, nor quite so prone to produce an unbreakable habit, yet the fact remains that many who tamper with such drinks learn only too late that the habit is fixed. It is this habit which has such a strong hold on our people that makes prohibition almost impossible and probably will continue to make it ineffective, since we will always have whiskey drinkers in our midst so long as strong drinks are handled in any part of the country.

People are going to have a stimulant to take when tired, worried or despondent and if mild stimulants are not at hand, then they are going to order stimulants in small packages from a distance. It is this fact that above all others tends to hold back the advent of national prohibition. The youth of the country not finding beer and wine convenient, take to whiskey in the beginning instead of going the recognized route of beer, whiskey, brandy, absinthe, morphine and finally cocaine. It is to be hoped the Harrison act will cut out the use of opium and cocaine, and that some later act will put the control of the stronger alcoholics in the hands of the government. However, the nation as a whole is not in a condition to give up all forms of stimulating drink and for that reason beer and the lighter wines should be sold to those who care for these drinks. But the saloon as it now exists should be outlawed, all drinking places should be open to women as well as men and should be reputable places for eating and drinking rather than dives or palaces run simply as places in which to get drunk. If a man could take his family with him there would be less chance of his ending up his evening befuddled in mind and empty of pocket as the result of trying to keep up with the "boys." Germany, though misguided in some respects, certainly leads the world in many ways, and yet the German nation brewed and drank beer long before the birth of Christ. Should the open saloon or

rather restaurant be tried and proved a failure then it would be much easier to institute prohibition against all alcohol-containing drinks.

—W. T. B.

UNITED STATES CIVIL SERVICE EXAMINATION.

Mine Surgeon (Male), \$2,400—\$2,700. April 20, 1915.

The United States Civil Service Commission announces an open competitive examination for mine surgeon, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bureau of Mines, Pittsburg, Pa., at a salary ranging from \$2,400 to \$2,700 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of the person appointed to fill the position of mine surgeon will be to travel with the Bureau of Mines, rescue cars and make a physical examination of all applicants for first-aid and mine-rescue training; to assist the Bureau of Mines' first-aid miners in improving the technique of first-aid methods pertinent to mining and metallurgical accidents; to enter mines after fires and explosions for the purpose of taking blood samples and making other physical examinations of the victims before their removal; to make physical examinations of those engaged in mining and metallurgical industries to determine the effect, if any, of such occupations on the health and physical well-being of those employed therein; to examine the sanitary and hygienic conditions in and about mines and mining villages and physical well-being of those engaged therein.

Competitors will not be assembled for examination, but will be rated on the following subjects, which will have the relative weights indicated:

<i>Subjects</i>	<i>Weights</i>
1. Education -----	30
2. Experience -----	50

3. Publications or thesis.....	20
Total.....	100

Graduation from a medical school of recognized standing, and at least two years' medical and surgical experience with industrial workers, are prerequisites for consideration for this position.

Under the second subject additional credit will be given for hospital experience, medical and surgical experience with mining and metallurgical workers, and for experience in laboratory and field investigations of industrial and occupational diseases.

Under the third subject a thesis may be submitted in lieu of or in addition to publications. If such a thesis is submitted it must deal with some phase of the subjects of medicine, surgery, or sanitation.

Statements as to education and experience are accepted subject to verification.

Applicants must not have reached their forty-fifth birthday on the date of the examination.

This examination is open to all men who are citizens of the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply for Forms 304 and 2,095, stating the title of the examination for which the forms are desired, to the United States Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Postoffice, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; Customhouse, New York, N. Y., New Orleans, La.; Honolulu, Hawaii; Old Customhouse, St. Louis, Mo.; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed, excluding the medical certificate, and filed with the Commission at Washington, with the material required, prior to the hour of closing business on April 20, 1915.

Issued March 11, 1915.

PHYSICIANS! WILL YOU HELP REDUCE CANCER MORTALITY.

Seventy-five thousand people die from cancer in the United States every year. The public is gradually becoming alive to the "Cancer Menace" and will soon demand more active efforts from us. Are you doing all you can to diminish cancer mortality among your patients?

You can help by:

1. Always being on the watch to make an early diagnosis.
2. By insisting on proper treatment WITHOUT DELAY.

Read the articles and editorials in this issue.

SPECIAL MAIL COURSE FOR HEALTH OFFICERS.

MADISON, WIS., March 2—A correspondence for health officers is announced by the University of Wisconsin Extension Division. This course has been prepared to meet the need and desire frequently expressed for better preparation for local health administration. It is designed for health officers not able to pursue or warranted in taking residence work, as well as for others desiring to take up the study of health administration.

But few communities are prepared to employ on full time thoroughly trained sanitarians, according to the bulletin announcing the courses. Yet there is not a single community that does not need expert sanitary work in some direction. The topics treated in this course will cover laws and regulations, vital statistics and health surveys, transmissions of disease, nuisances, and administration of a health department. The administration part of the course will treat of inspection work, visiting nursing, medical inspection of school children, quarantining, isolation, and disinfection, use of laboratory, registration and other respects.

Publisher's Department

Pepsin is undoubtedly one of the most valuable digestive agents of our *Materia Medica*, provided a good article is used. "Robinson's Lime Juice and Pepsin" (see advertisement in this issue) we can recommend as possessing merit of high order.

The fact that the manufacturers of this palatable preparation use the purest and best pepsin and that every lot made by them is carefully tested before offering for sale, is a guarantee to the physician that he will certainly obtain the good results he expects from pepsin.

NERVOUSNESS.

As to the drugs to be given in nervousness, there is only one class which has a specific influence in controlling nervous excitability. This is the bromides, and it has been found that a mixture of several of them is better than one alone. For this reason many physicians prefer Peacock's Bromides, which is a splendidly balanced mixture and which even on prolonged use gives rise to little or no gastric disturbance. The dose must be regulated according to the state of the patient, but when judiciously given there is never any difficulty of controlling even the more severe cases of bromide nervousness. In the more severe forms of neurasthenia, complete rest in bed with small doses of Peacock's Bromides is usually more effective than any other treatment. In epilepsy, which is also a disease in which the brain reactions are exaggerated, larger doses are needed, but as this preparation is more pronounced in effect than other bromides the enormous quantities which are sometimes prescribed are never necessary in order to control the convulsions, and as the digestion is rarely if ever deranged it can be given for a much longer period of time.

It is during the spring months more particularly that the physician is called upon to treat patients, who though not ill enough to be in bed, are not at all well. The symptoms are very much like those experienced in malaria but the causes are entirely different and a different treatment is necessary.

This condition arises from the fact that in the spring the eliminative functions do not present their usual activity owing to the torpor and locked-up secretions which have existed during the winter months, when the skin neglects its duties and the kidneys are overworked.

In such cases the use of tongaline, either liquid or in one of its tablet forms, will be attended with most beneficial results, by promoting the absorptive powers of the various glands which have been clogged and by its stimulating action upon the liver, the bowels and the skin.

ELEGANT PHARMACEUTICAL SPECIALTIES

Attention is called to the **EXCELLENCE** and **VALUABLE THERAPEUTIC PROPERTIES** of these **PREPARATIONS**

Robinson's Hypophosphites

NUTRITIVE, TONIC, ALTERATIVE.

A STANDARD REMEDY in the treatment of Pulmonary Phthisis, Bronchitis, Scrofulous Taint, General Debility, etc. Stimulates Digestion, promotes Assimilation.

R Each fluidounce contains:

Hypophosphites	Soda	- - -	2	grains
"	Lime	- - -	1 1/4	"
"	Iron	- - -	1 1/4	"
"	Quinine	- - -	3/4	"
"	Manganese	- - -	1 1/4	"
"	Strychnine	- - -	1-16	"

Dose—One to four fluidrachms.

6 oz. Bottles, 50 Cents.
Pint Bottles, \$1.00.

This preparation does not precipitate—retains all the salts in perfect solution.

Robinson's LIME JUICE and PEPSIN

Pure Concentrated Pepsin combined with Pure Lime Juice.

An exceedingly valuable Combination in cases of Dyspepsia, Indigestion, Bilio-ness, Heartburn and Mal-Assimilation.

APERIENT AND CHOLAGOGUE.

Impaired Digestion is the consequence of a sedentary life, coupled with nervous and mental strain.

Reliable Pepsin is one of the best DIGESTIVE agents known. **Pure Lime Juice** with its **APERIENT** and **CHOLAGOGUE** characteristics with the Pepsin furnishes a complete and most efficient combination as a remedy for the disorders named.

Robinson's Lime Juice and Pepsin is **PALATABLE** and **GRATEFUL** to the taste.

Dose—Adult, dessertspoonful to table-spoonful, after eating. Children one-half to one teaspoonful, according to age.

PRICE, 6 oz. Bottles, 50 Cents.
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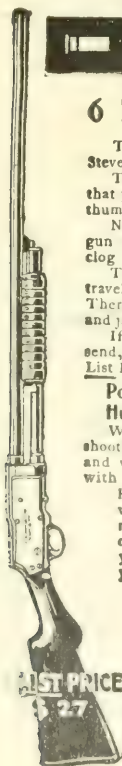
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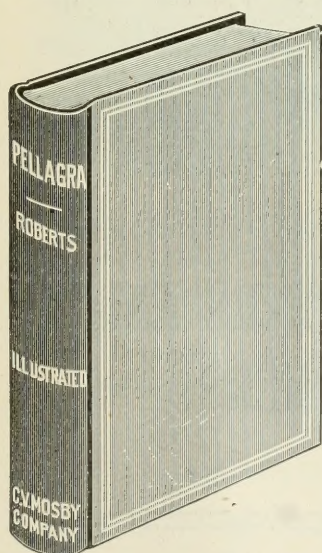
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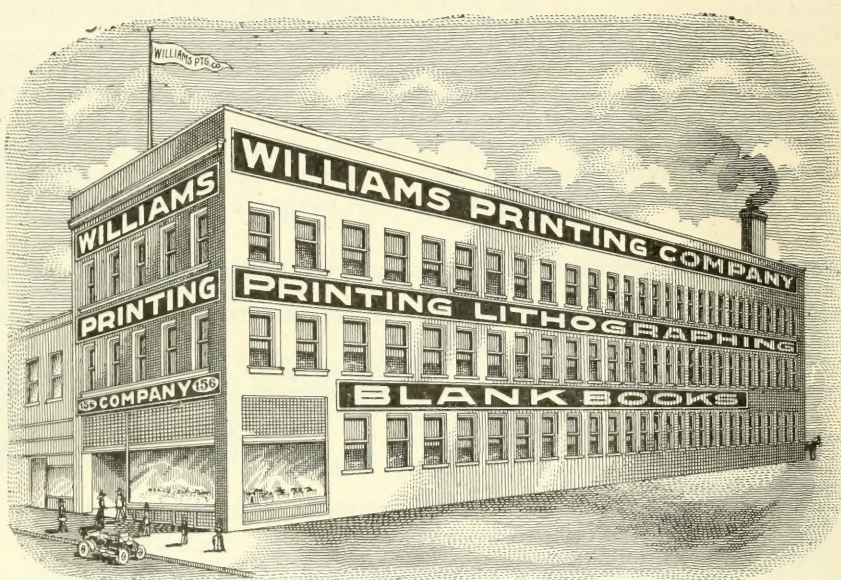
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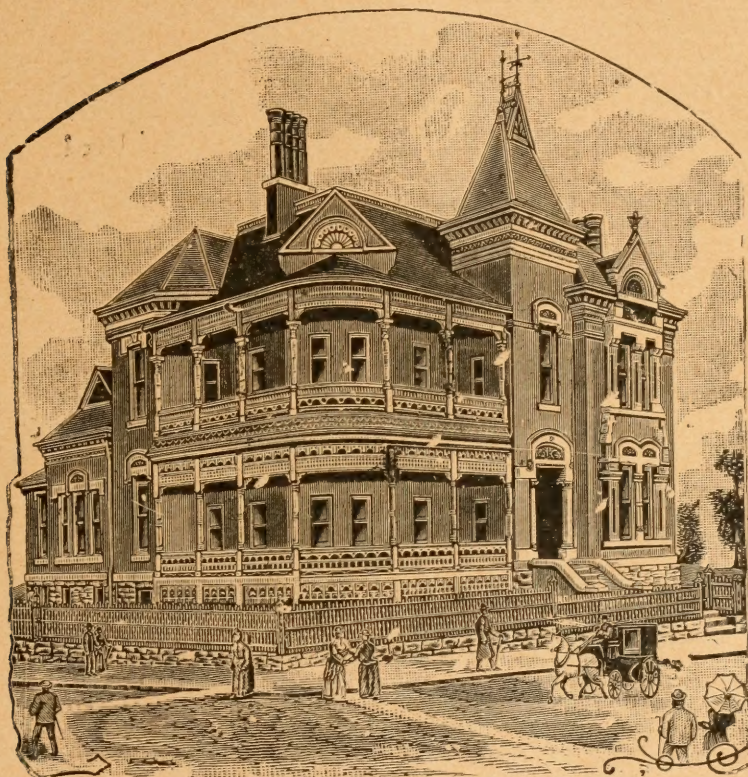


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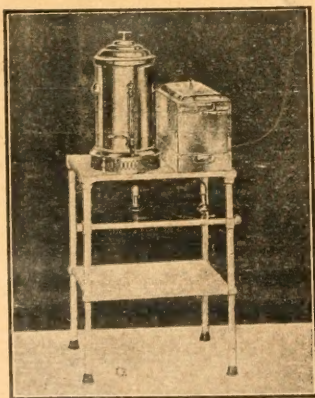
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